BARON LANGUAGE SCHOOL

Baron language school

Science Department



Primary four 2nd term

Name: ………………………………………………

Class: ………………………………………………

Lesson (1) – Unit (1)

The human Digestive System

The body of the living organism consists of group of systems, each system consists of group of organs which consists of group of tissues, each tissue consists of group of similar cells.

The cell: It is the smallest building unit of the body of the living organism

Human body → systems → organs → tissues → cells

Human body systems:

1-The digestive system: It digests and absorbs food

2-The respiratory system: It carries out the respiration process

3-The urinary system: It helps the body to get rid of the harmful wastes

4-The circulatory system: It distributes the digested food and oxygen gas all over the body cells and carries the wastes away from the body.

5-The nervous system: It gives us the ability to feel, see, hear, smell and taste.

6-The reproductive system: It produces new individuals who look like us.

The human digestive system:

It breaks down complex food into simple substances to let the body get their benefits.

It consists of two main parts: the digestive canal and the digestive canal supplementaries (accessory glands).

Digestive System

Salivary gland
Esophagus
Liver
Stomach
Gallbladder
Pancreas
Small intestine
Large intestine
Rectum
Anus



Digestive canal supplementaries:

1-Salivary glands:

There are three pairs of salivary glands which secretes saliva which contains enzymes that change starch into sugar to be easily digested.

2-Liver:

It secretes bile juice which helps in digestion of fats and changes it into fatty emulsion.

3-Pancreas:

It secretes pancreatic juice which poured in small intestine to complete the digestion process with other juices.

Digestive canal:

It consists of mouth, pharynx, esophagus, stomach, small intestine, large intestine, rectum and anus

1-Mouth:

It is the first organ in the digestive system and it helps in cutting, tearing an grinding food by the teeth and digestion of starch into sugar.

It consists of teeth, tongue and salivary glands

Teeth: they are 32 in adults in two jaws upper and lower, each jaw has 16 teeth divided into 4 incisors, 2 canines, 4 premolars and 6 molars

Incisors cut the food into small pieces, canines tear the food and molars grind the food to be easily swallow.

Tongue: It is responsible of food tasting, mixes food with saliva and it moves the food around inside the mouth cavity.

2-Pharynx:

It is a common cavity between esophagus and trachea, it transfers food from mouth to esophagus.

3-Esophagus:

It is a muscular tube connecting to stomach, it allows food to pass from your mouth to your stomach.

4-Stomach:

It is a sac-like muscular organ which secretes gastric juice that makes incomplete digestion of proteins.

5-Small intestine:

It consists of two main parts which are duodenum and ileum, it digests the food completely and allow absorption of the digested food to the blood.

a)Duodenum: It is the first part that is connected to stomach, there are two important juices poured in it which are pancreatic juice that is secreted by pancreas and bile juice that is secreted by liver.

b)Ileum:

It is the second part that follows the duodenum in which the intestinal juice is poured and it completes the digestion of different types of food.

6-Large intestine:

It stores wastes, then ejects them outside the body through anus.

7-Rectum:

It absorbs the water from the food wastes.

8-Anus:

It expels the indigested food outside the body.

Digestion process:

It is a process of breaking down food from a complex form into simple substances to let the body get benefit from them.

Absorption process:

It is a process of transferring the digested food from the small intestine to the blood.

Enzymes: they are digestive substances that digest food and convert it into simple substances.

How can you keep the digestive system healthy?

1-Chew the food well, practice sport regularly

2-Don't buy food from street sellers to avoid diseases

3-Avoid eating food that contains large amounts of fats as fast food or having food that contains flavor additives.

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Worksheet (1) – unit (1)

Complete:

1-The tissue consists of……………….., while the organ consists of ……………..

2-The…………………..process is the breakdown of substances to get ……………… from them.

3-The digestive canal supplementaries are………………, ……………. And…………………..

4-…………………is the first part of the small intestine, where bile juice and pancreatic juice are poured.

5-…………………..stores food remains, then ejects them outside the body through………………….

6-The protein digestion starts in……………………and completed in …………………

7-………………is the cavity in which teeth and tongue are existed and saliva glands are opened.

8-………………..is secreted by pancreas, while…………… is secreted by liver.

9-…………………...is the common cavity between esophagus and trachea.

10-………………..are the digestive glands that secretes……………..to digest starch into…………………

11-…………………and……………… cut and tear food, while……….. grind the food.

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Give reasons:

1-Digestion process is very important.

……………………………………………………………………………………………
……………………………………………………………………………………………

2-Salivary glands secrete saliva inside the mouth cavity.

……………………………………………………………………………………………
……………………………………………………………………………………………

3-Bile juice is very important.

……………………………………………………………………………………………
……………………………………………………………………………………………

4-Liver and pancreas are considered from the important parts of the digestive system.

……………………………………………………………………………………………
……………………………………………………………………………………………

5-Fats are digested in duodenum

……………………………………………………………………………………………
……………………………………………………………………………………………

Write the scientific term:

1-A system that carries out the process of breathing (…………………)

2-A system that carries out the transport function in the human being. (………………………..)

3-A system which makes us produce new individuals who look like us (……………………)

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4-The organ in the mouth cavity that moves the food around (…………………….)

5-A type of glands that exists in three pairs and secrete saliva (…………………….)

6-They are digestive substances that digest food and convert it into simple substances (………………….)

7-A muscular tube allows food to pass from mouth to stomach (…………………….)

8-A part of the small intestine that is connected to the stomach (……………………..)

9-The juice that is secreted from the liver and affects fats digestion (…………………)

10-A process of transferring the digested food from the small intestine to the blood (…………………)

Put (√) or (×) and correct the wrong one:

1-The digestive system consists of a group of organs. (   )

2-Production of new individuals is the function of the urinary system (   )

3-Pharynx is a muscular tube that allows food to pass from mouth to stomach (   )

4-Storing and ejecting the food remains are the function of the small intestine. (   )

5-The incomplete digestion of protein occurs in esophagus (   )

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6-Each jaw in the mouth has 32 teeth (   )

7-Bile juice and pancreatic juice are poured in duodenum (   )

8-The nervous system helps our bodies get rid of harmful substances. (   )

Mention the function of each of the following:

1-The urinary system:

……………………………………………………………………………

2-Large intestine:

……………………………………………………………………………

3-Esophagus:

……………………………………………………………………………

4-Tongue:

……………………………………………………………………………

5-The nervous system:

……………………………………………………………………………

Lesson (2): Human Respiratory System

Respiration process:

It is the process that gives the body of the living organism the needed energy from the digested food to do all the body activities.

Food + oxygen ⟶ carbon dioxide + water vapor + energy

The human respiratory system consists of: nose, pharynx, trachea, two bronchi and two lungs.

1-Nose:

It is the first part in which lined with hair and mucus to filter the air from dust and microbes before entering the lungs and also lined with blood capillaries to warm air before entering the lungs.

So, breathing through nose is preferable to that through mouth.

2-Pharynx:

It is a common cavity between the digestive system and the respiratory system and it transfers the inhaled air from nose to trachea.

3-Trachea:

It is a cartilaginous tube that is existed in the thoracic cavity as it is supported by incomplete cartilaginous rings to be permanently opened for breathing and lined with cilia to eject up the strange objects.

At the top of trachea, there are the larynx (voice box) that contains two vocal cords that vibrate to produce sound.

Epiglottis that lies at the top of the larynx to close the trachea during swallowing to prevent food from entering the trachea

4-The two lungs:

They are surrounded by ribs, each lung contains bronchus which is divided into bronchioles which end in tiny air sacs called alveoli which surrounded by thin blood capillaries.

Air sacs (Alveoli) permit the exchange of gases between it and the blood in the blood capillaries through their thin walls.

5-Diaphragm:

It is a muscle that separates the thoracic (chest) cavity from the abdominal cavity and has an important role in the respiration process.

The mechanism of respiration:

1-Inhalation process:

It is a process in which air rich in oxygen gas enters the lungs.

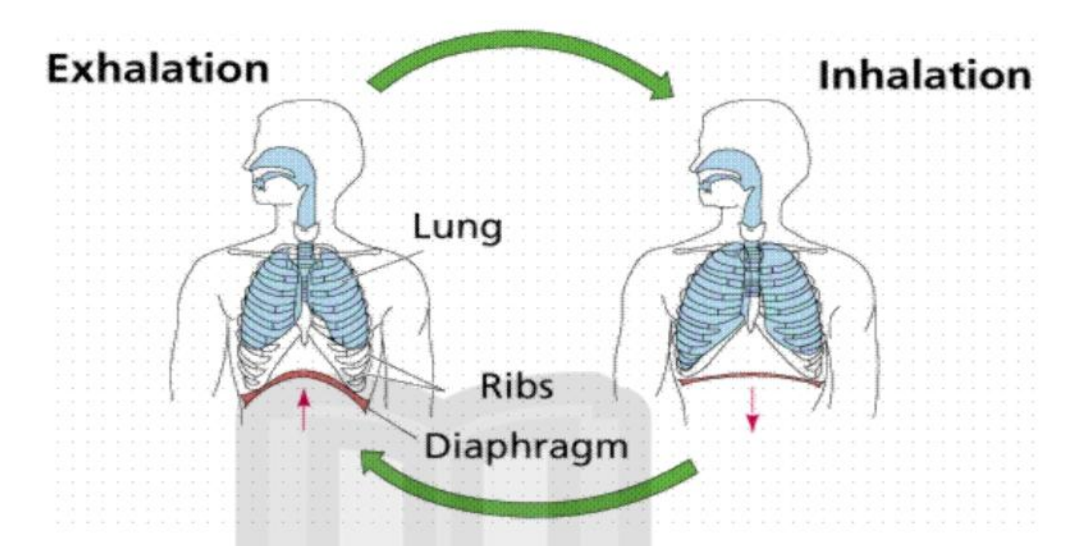
In inhalation process, the diaphragm muscle contracts and move down, the ribs rise upwards, the chest cavity increases and air rich in oxygen enters the two lungs.

2-Exhalation process:

It is a process by which the air rich in carbon dioxide and water vapor is expelled outside the body.

In exhalation process, the diaphragm muscle relaxes and moves up, the ribs move downwards, the chest cavity decreases and air rich in carbon dioxide and water vapor go out from the two lungs.

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How to keep our respiratory system healthy?

1-Avoid being in crowded or poor ventilation places

2-Keep off the sever cold and eat fruits (c) such as orange, lemon and guava to protect yourself from cold.

3-Stop smoking or being passive smoker.



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Worksheet (2) – unit (1)

Complete:

1-Oxygen gas burns the digested food to produce …………, ………. and ……………….

2-Inside each lung, each bronchus is divided into……………that end in ………………

3-Diaphragm separates……………….cavity from……………cavity

4-Nose is lined with……………, …………… and ………………

5-The respiratory system consists of……………, pharynx, …………, ……………and……………….

6-Trachea is supported with incomplete………………and lined with ………………..to elect up dust and microbes.

7-………………….muscle helps in the mechanism of respiration

8-In the inhalation process, the………………contracts and moves downwards, while……………….rise up.

9-During the exchange of gases inside alveoli,……………. Goes into the blood and………………goes into the alveoli.

10-To keep the respiratory system healthy, you must eat fruits rich in ……………as………………and……………….

11-Carbon dioxide gas causes the turbidity of……………………

12-Air enters the two lungs during the…………………process and leaves them during the……………….process.

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Put (√) or (×) and correct the wrong one:

1-Cilia in trachea ejects up the strange objects (   )

2-The respiratory system exists in thoracic cavity (   )

3-The walls of alveoli and blood capillaries are thick (   )

4-Gases exchange takes place in the pharynx (   )

5-The larynx is found at the top of the trachea (   )

6-Avoid being in crowded places is a method to keep your digestive system healthy (   )

7-Water vapor turns limewater milky (   )

8-Energy and oxygen gas are products of the respiration process (   )

Give reasons:

1-Oxygen gas is necessary for the human body.

……………………………………………………………………………

……………………………………………………………………………

2-Breathing through nose is preferable to that through mouth

……………………………………………………………………………

……………………………………………………………………………

3-Alveoli and blood capillaries have thin walls

……………………………………………………………………………

……………………………………………………………………………

4-The volume of chest cavity increases during the inhalation process

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……………………………………………………………………………………
……………………………………………………………………………………

5-The exhaled air turns clear limewater into turbid

……………………………………………………………………………………
……………………………………………………………………………………

6-Food doesn't enter the respiratory system during swallowing of food.

……………………………………………………………………………………
……………………………………………………………………………………

Write the scientific term:

1-A process in which the thoracic cavity becomes narrow and the air rich in carbon dioxide gas goes out from the two lungs(……………..)

2-Tiny air sacs found in the two lungs (………………..)

3-The organ that contains the two vocal cords (………………..)

4-A muscle that separates the thoracic cavity from the abdominal cavity (…………………..)

5-A process by which the air enters the lungs (…………………)

6-A process by which man gets his needed energy from food (……………………….)

7-A tube in the respiratory system that is lined with cilia (……………)

8-The required gas for the respiration process (……………..)



Midterm revision sheet

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Midterm revision sheet

Complete:

1. An adult person has ………………teeth, ……………..in each jaw.
2. The teeth are divided into…………………., ………………….,………………….. and ……………………….
3. The functions of the tongue are:
   a- ………………………………………………………….
   b- ………………………………………………………….
4. There are …………………pairs of salivary glands.
5. The function of the salivary glands is ……………………………………………………………………………………………
6. ……………………………..in the stomach helps to digest protein.
7. The intestinal juices are: ……………………….. (Secreted by liver) and ……………………………….. (Produced by pancreas).
8. The small intestine starts with a part known as ………………………which is followed by another part called ……………..
9. Absorption process takes place in the ……………………….. Water is absorbed in the ………………….....from food remains, and then these wastes are ejected by the body through the ………………………..
10. Gastric juice digests……………………………in the…………………………..
11. Bile juice helps to digest…………………………which change into ……………………………….., and takes place in the …………………………
12. Saliva contains digestive substances called ………………………which converts …………………………..into …………………………This process takes place in the………………………………
13. The digestive canal starts with………………………and ends with ……………………………

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14. The human respiratory system consists of: ……………..,
 …………………, ……………………and …………………..
15. ……………………..is a common cavity which leads to the esophagus and trachea.
16. At the top of the trachea, there are …………………. and …………………
17. …………………..closes the top of trachea during swallowing.
18. The respiration process includes …………………. and……………..
 processes, and it increases during ……………………..
19. The exhaled air contains ………………..and…………………..
20. Nose is lined with………………. and…………………………..
21. …………………..is found in nose to warm the inhaled air.
22. Trachea is supported with ………………………………..
23. Trachea is lined with……………………….. to eject up dust.
24. The bottom of the trachea branches into two narrow tubes called ……………
25. The exchange of gas takes place in the……………………….
26. Inside each lung, each bronchus is divided into…………….that end in ………………………
27. ………………..muscle helps in the mechanism of respiration.
28. Diaphragm separates……………… cavity from………………..cavity.
29. Carbon dioxide gas causes the turbidity of…………………………
30. In inhalation process, we take………………… But in exhalation process we expel…………………………
31. The exchange of gases occurs in alveoli between……………..and ………………

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Give reason for:

1. Digestion process is very important.

   ………………………………………………………………………………………………

   ……………………………………………………………………………………

2. Teeth are different in their kinds.

   ………………………………………………………………………………………………

   ……………………………………………………………………………………

3. Bile juice is very important.

   ………………………………………………………………………………………………

   ……………………………………………………………………………………

4. You must not eat fast meals.

   ………………………………………………………………………………………………

   ……………………………………………………………………………………

5. Importance of oxygen gas for human body.

   ………………………………………………………………………………………………

   ……………………………………………………………………………………

6. Importance of respiration process.

   ………………………………………………………………………………………………

   ……………………………………………………………………………………

7. Exhaled air turns lime water turbid.

   ………………………………………………………………………………………………

   ……………………………………………………………………………………

8. Lungs have alveoli.

   ………………………………………………………………………………………………

   ……………………………………………………………………………………

9. You must avoid being in crowded area.

   ………………………………………………………………………………………………

   ……………………………………………………………………………………

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10. We prefer breathing from nose.

………………………………………………………………………………………………………

……………………………………………………………………………………..

Write the function of:

1. Liver: ………………………………………………………………………………………
2. Stomach: …………………………………………………………………………………
3. Small intestine: ……………………………………………………………………
4. Iodine: ……………………………………………………………………………………..
5. The blood capillaries in the nose: ………………………………………………….
6. Rectum: ……………………………………………………………
7. The cilia in trachea: ………………………………………………………………

Put (√) or (×) and correct the wrong :

1. A living organism body consists of a set of systems. [ ]
2. The function of the digestive system is the digestion of food. [ ]
3. Digestion of food is changing food to complex substances. [ ]
4. The digestive system of the human body is divided into stomach and mouth. [ ]
5. The digestive canal consists of mouth, pharynx, esophagus, stomach, and small intestine and large intestine. [ ]
6. The digestive canal supplementaries (associates) are liver , and pancreas only [ ]
7. Teeth number in adult is 32. [ ]
8. The function of the tongue is cutting food. [ ]

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9. The salivary glands secrete a liquid known as saliva. [ ]
10. Pharynx is a common tube. [ ]
11. In the stomach incomplete digestion of protein takes place. [ ]
12. The digested food is absorbed through mouth. [ ]
13. Water is absorbed in the large intestine. [ ]
14. You mustn't chew food well. [ ]
15. You must eat much food contains fats. [ ]



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Lesson (3): The cell-the basic unit of structure of living organisms

Cells ⟶ tissues ⟶ organs ⟶ systems

The body is made up of group of systems that work integrally to keep the living organisms alive which consists of a set of organs

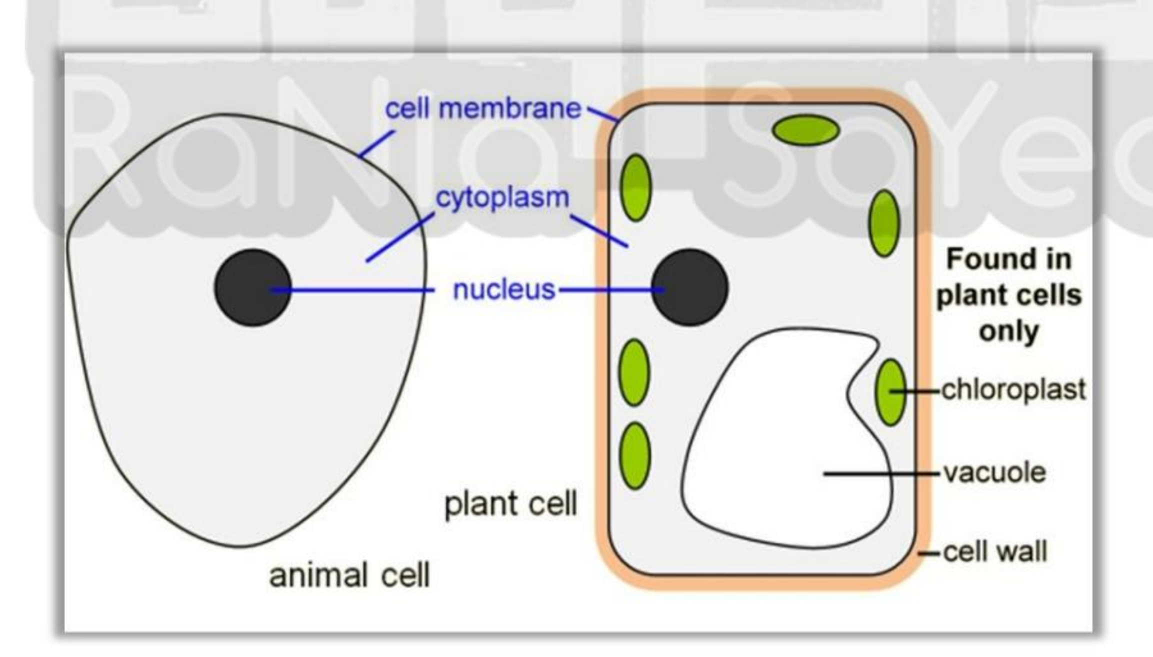
Each organ consists of a group of similar or different tissues, each tissue consists of symmetric units called cells.

The animal cell is the building unit of the animal body and the plant cell is the building unit of the plant body

The cell:

It is the building unit (unit of structure) of the living organism's body.

A) The animal cell: **B)The plant cell:**



The plant cell is characterized than the animal cell by the presence of cell wall and green plastids (chloroplasts)

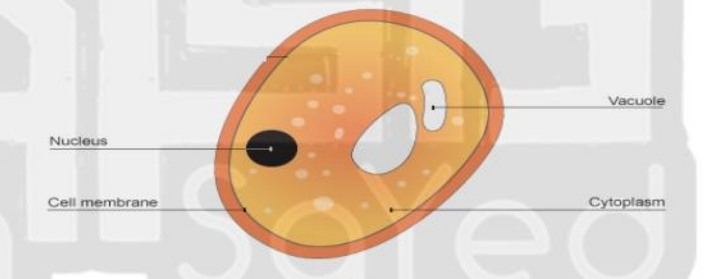
The animal cell has an indefinite shape due to the absence of cell wall

Unicellular organisms:

It is an integrated living organism that proves that the cell is the unit of structure and function because it has the ability to do all its biological functions.

Some of them are harmful as bacteria that cause a lot of diseases and some of them are useful such as bacteria used in making yoghurt and some types of cheese

Ex. Yeast fungus:



The economic importance of the yeast fungus:

It is used in making bread, where yeast produces carbon dioxide gas that causes the swelling of bread and make it porous and light

It is used in making alcohols, where yeast converts sugar solution into alcohol and carbon dioxide gas.

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Worksheet (3) – Unit (1)

Complete:

1-The cell is the unit of ……………….in the living organisms.

2-The plant cell is composed of…………., ……………., cytoplasm, …………………and green plastids.

3-…………………surrounds the plant cell from outside, while the plasma membrane surrounds……………. Cell from outside.

4-………………….is responsible for making food by photosynthesis process while……………….is responsible for the cell division.

5-The plant cell is characterized than the animal cell by the presence of ……………….and…………………. .

6-…………………..is an example of the unicellular organisms

7-The structure of yeast fungus is………………., …………., vacuole and………………..

8-The yeast fungus is used in making of……………and…………....

Give reasons:

1-The cell membrane is a very important component in the cell.

…………………………………………………………………………………
…………………………………………………………………………………

2-Chloroplasts play an important role in the plant cell.

…………………………………………………………………………………
…………………………………………………………………………………

3-Yeast fungus has a definite shape

……………………………………………………………………………
……………………………………………………………………………

4-The nucleus of the cell has an important role

……………………………………………………………………………
……………………………………………………………………………

5-Yeast fungus has an economic importance

……………………………………………………………………………
……………………………………………………………………………

Write the scientific term:

1-A group of symmetric cells (……………………..)

2-The outer layer of the plant cell (…………………….)

3-A unicellular organism used in making alcohol (……………………)

4-The unit of structure in the living organism's body (…………………)

5-A structure that controls the substances that enter or leave the cell (……………….)

6-A fluid that fills the cell, where the biological processes occur (……………………..)

7-A structure that helps the plant cell makes its food and characterizes the plant cell than the animal cell (…………………)

8-A group of organs working together (……………………)

9-The living cell that contains chloroplasts (………………….)

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Put (√) or (×) and correct the wrong one:

1-The system is a group of tissues work together (   )

2-Cell division is the role of nucleus in the cell (   )

3-Bacteria and yeast are unicellular micro-organisms (   )

4-Tissue is made up of symmetric organs (   )

5-The plasma membrane surrounds the cytoplasm (   )

6-The chloroplasts are responsible for making food by the reproduction process (   )

7-The cell that surrounds the animal cell from outside (   )

Lesson (4):The importance of sunlight to living organisms

Sunlight is used by plants to make their own food by photosynthesis process, the plant is the main source of food and energy for man and most of animals

Photosynthesis process:

It is a biological process takes place in the green parts of the plants (leaves) to make its own food (sugar or starch) and oxygen gas is released in the presence of sunlight, water, carbon dioxide gas and some mineral salts.

The necessary factors of the photosynthesis process:

1-Sunlight 2-chloroplasts 3-Carbon dioxide gas 4-water and mineral salts

In the respiration process of all living organisms, the oxygen gas is used and carbon dioxide gas is produced, so the green plant is necessary for keeping the ratio of oxygen gas and carbon dioxide gas constant.

The products of the photosynthesis process:

1-Starch (carbohydrates) 2-Oxygen gas

***To prove the existence of starch in the green plant leaves:**

-Remove a green plant leaf from a potted plant, then put it in a cup of boiled water to kill the living cells

-Put the leaf in ethyl alcohol to get rid of its green colour (chloroplasts), then wash the leaf gently with water and put some drops of iodine solution

-The leaf will be coloured blue due to the presence of starch.

***To prove the oxygen gas is released from the photosynthesis process:**

-Dissolve sodium bicarbonate in a container containing water to obtain carbon dioxide, then put a sample of aquatic plant (Elodea) in the container and invert a glass funnel above it

-Invert a test tube filled with water over the funnel and expose the apparatus to sunlight for few hours

-The level of water in the test tube falls down and air bubbles are formed, turn up the test tube and close it to the lighted splint

-The glowing of splint increases indicating the presence of oxygen gas which helps in burning.

The types of living organisms are classified according to their feeding into:

1-Producers:

They are living organisms that can make their own food by the photosynthesis process

Ex. Green plants, green algae and some types of bacteria

2-Consumers:

They are living organisms that depend on producers directly or indirectly to get their food

Ex. Human, herbivorous animals and carnivorous animals

3-Decomposers:

They are living organisms that can't make their food by themselves due to the absence of chloroplasts in their cells, but they get their food through the decomposing of the organic wastes as dead bodies, plant remains and decayed food.

Ex. Some types of bacteria as yoghurt bacteria

Some types of fungi as yeast fungus and bread mold fungus

The importance of decomposers:

1-They are used in a lot of industries

2-They increase the soil fertility

3-They help us to get rid of dead bodies of organisms and the plant remains

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Worksheet (4) – Unit (1)

A)Complete:

1-The plant is the main source of……………..and……………… for man and animals.

2-The necessary factors for photosynthesis process are………………., ………………….., ………………..and…………………….

3-We can test the presence of starch in the plant leaves by using …………………

4-The plant cells absorb sunlight by …………….which give the plant its………………….colour

5-…………………gas is produced by the green plants during the photosynthesis process.

6-The green plant is necessary for keeping the ratio of…………….and ……………….constant in air.

7-The living organisms are classified according to their way of feeding into ……………., ………………and ………………

8-……………., …………….and…………………are examples of consumers that feed on producers.

9-………………..and …………………..are examples of decomposers

10-Human is considered as………………..that feeds on producers.

Put (√) or (×) and correct the wrong one:

1-Starch and oxygen gas are produced by the plant through the respiration process (   )

2-Digestion process is a biological process takes place in the leaves of plants (   )

3-Sunlight and mineral salts are only the necessary factors for the photosynthesis process (   )

4-The presence of starch in plant leaves can be detected by using iodine solution (   )

5-We use sodium bicarbonate solution to absorb oxygen gas from water (   )

6-Increasing the soil fertility is from the importance of producers (   )

7-Bread mold fungus and some types of bacteria are examples of decomposers (   )

8-Green plants and green algae are examples of producers (   )

Give reasons:

1-Chloroplasts are very important to plants.

……………………………………………………………………………

……………………………………………………………………………

2-The ratio of oxygen gas and carbon dioxide gas in air is constant.

……………………………………………………………………………

……………………………………………………………………………

3-Lion and tiger are consumers.

……………………………………………………………………………

……………………………………………………………………………

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4-The glowing of splint increases when you close it to the top of test tube contains oxygen gas.

……………………………………………………………………………………

……………………………………………………………………………………

5-Decomposers and consumers can't make their own food

……………………………………………………………………………………

……………………………………………………………………………………

6-Decomposers have great economical and environmental importance

……………………………………………………………………………………

……………………………………………………………………………………

What is the importance of:

1-Sodium bicarbonate

……………………………………………………………………………………

2-Ethyl alcohol

……………………………………………………………………………………

3-Iodine solution

……………………………………………………………………………………

4-Oxygen gas

……………………………………………………………………………………

Unit (2): lesson 1

Forms of energy and their changes

Energy: it is the ability to do work

Forms of energy:

1-Potential energy: the energy stored in the spring of any toy as a toy car

2-Light energy: the energy produced by the electric lamp or the sun

3-Kinetic energy: the energy produced from motion as in the electric fan and washing machine

4-Heat energy: the energy produced by the heater

5-Sound energy: the energy produced from vibration as in piano and the radio

6-Electric energy: the energy produced by the dry cell (battery) and solar cells

7-Chemical energy: the energy stored in the battery or in the food

***Sound energy:**

It is a form of energy result from vibration of objects and cause hearing

Ex. –when you tap a tuning fork on a wooden table you hear a sound

-When you touch your larynx during speaking, you find that it moves and vibrates producing sound

Changes of energy:

1-Changing of potential energy into kinetic energy:

As in the spring of children toys, on rotating a spring it stores a potential energy and on leaving the spring, the stored potential energy changes into kinetic energy that causes the motion of the car.

Potential energy increases by increasing the weight and vice versa

2-A)Changing of kinetic energy into sound energy:

The kinetic energy of the rubber band changes into sound energy due to the vibration of the rubber band

B)Changing of kinetic energy into heat energy:

As in rubbing your hands, hammering on a piece of iron and removing a nail from a piece of wood.

C)Changing of kinetic energy into electric energy:

As in the dynamo (electric generator)

3-A)Changing of electric energy into light energy:

As in electric lamp, where on passing the electric current through the lamp it lights up

B)Changing of the electric energy into kinetic energy:

As in electric fan, the washing machine and the electric motor

C)Changing of the electric energy into sound energy:

As in the recorder, radio, cassette and TV

4-A)Changing of light energy into heat energy:

When you put a magnifying convergent lens over a paper and expose the lens to sun rays for a period of time, the piece of paper will heat up and it may burn due to changing of light energy into heat energy

B)Changing of light energy into electric energy:

As in the solar cells in which it provides the satellites by the electric energy to operate their equipment and it generates the electric energy that is used in homes

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Worksheet (1) – unit 2

Complete:

1-When the tuning fork vibrates, it produces………………

2-The electric energy can be changed into ………………….energy and ………………energy

3-When you fill a spring of a toy, the leave the toy……………..energy changes into………………energy

4-……………..energy changes into……………..energy during knocking on the door

5-In the motor of a washing machine, the ……………energy changes into……………….energy

6-……………… is a form of energy that reaches ear causing hearing

7-………………….is the energy produced by the heater, while ……………… is the energy produced by radio

8-The energy produced from the guitar is…………….., while the energy produced from hammering on a piece of iron is……………….

9-Rubbing your hands changes the……………. Energy into…………… energy

10-Dynamo changes ……………… energy into……………….energy while electric motor changes…………… energy into………………..

Give reasons:

1-Lightning the lamp of a motorbike at different speeds

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……………………………………………………………………………
……………………………………………………………………………

2-The solar cell is useful

……………………………………………………………………………
……………………………………………………………………………

3-On removing a nail from a wooden plate, the nail becomes warm

……………………………………………………………………………
……………………………………………………………………………

4-You hear a sound when you tap a tuning fork

……………………………………………………………………………
……………………………………………………………………………

Write the scientific term:

1-An equipment that changes the kinetic energy into sound energy (……………………………..)

2-The energy used in a dynamo and violin (…………………………)

3-The energy used in solar cells and solar heater (……………………………)

4-The energy produced from the dry cells (……………………….)

5-It is the ability to do work (……………………….)

6-A form of energy that is produced from the vibration of objects (……………………….)

7-The energy that changes into heat energy when you rubbing your hands together (…………………………)

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Put (✔) or (×) and correct the wrong one:

1-Electric energy, sound energy and light energy are from the forms of the energy (   )

2-In the spring of a toy car, the kinetic energy changes into potential energy (   )

3-On knocking on the door, the kinetic energy changes into light energy (   )

4-During the motion of the car, a car lamp lights due to the changing of kinetic energy into potential energy (   )

5-The heater has the ability to do work (   )

Write the name of energy used and energy produced in the following devices:

1-Dynamo

……………………………………………………………………………………

2-Violin

……………………………………………………………………………………

3-Solar heater

……………………………………………………………………………………

4-Electric motor

……………………………………………………………………………………

Unit (2): lesson 2

The electricity

Electricity is divided into two types:

1-static electricity:

It is a type of electricity that is formed from electric charges that remain on an object

Ex. -The vision of light in the sky that is called lightning

-standing of your hair during combing it by a plastic comb

-Hearing a sound when you putting off your clothes

Generally, rubbing of objects generates static electricity

2-Dynamic (current) electricity:

Current electricity: it is the electric charges that flow through connecting wires for long distances forming the electric current

The electric current is a movable electric charges and to obtain the electric current we need to form an electric circuit.

The electric circuit:

It is the closed path of the electric current

It contains:

a) the battery that is the source of electric current

b) the switch that is used to close and open the circuit

c) the connecting wires that used to connect all the circuit components together and transfer the electric current from the battery to the lamp

The electric equipments that are operated by the current electricity used at home are:

Television, washing machine, computer, vacuum cleaner, recorder, heater and refrigerator

Methods for rationalizing the consumption of electricity:

1-Using solar cells to produce electricity from the solar energy

2-turning off the lamps when leaving a place

3-Turning off all the unused equipments



Worksheet (2) – unit 2

Complete:

1-The flow of the electric charges through conductors produces ………………..electricity

2-The……………… is used to connect all the different components of the circuit together

3-The two types of electricity are………………..and……………………

4-The connecting wires are used to transfer the………………… from ……………… to the lamp

5-Rubbing of the objects generates……………………

6-To obtain an electric current from an electric circuit, it must be………

7-……………..and……………….are from the phenomena that is related to the static electricity

Give reasons:

1-Attraction of small bits of paper to a ruler rubbed by your hair

……………………………………………………………………………

……………………………………………………………………………..

2-The electricity is very important in our life

……………………………………………………………………………

……………………………………………………………………………

3-Hearing a sound when you put off your clothes

……………………………………………………………………………

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Put (✔) or (x) and correct the wrong one:

1-The electric wires are the source of electric current (   )

2-Electricity can be generated by a lemon, a rod of zinc and a rod of copper (   )

3-The electric charges that flow through a wire is known as dynamic electricity (   )

4-Small bits of paper are attracted to a rubbed plastic ruler (   )

5-WE can make a battery from some fruits such as apple, orange and lemon (   )

6-The switch is used to close the electric circuit only (   )

7-In the torch, the battery produces electric charges that are pushed causing the lightning of the lamp (   )

What is meant by:

1-Static electricity

………………………………………………………………………………

2-Dynamic electricity

………………………………………………………………………………

3-The electric circuit

………………………………………………………………………………

4-The battery

………………………………………………………………………………

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Final revision sheet



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Final revision sheet

Complete the following sentences:

1. A living organism body made up of a set of ………………
2. The function of the digestive system is ……………. the food .
3. Digestion is the changing of food from …………….. into …………….
4. The digestive system of the human body is divided into
   a. ………………………………………………….
   b. ………………………………………………….
5. The mouth is a …………… where ………. , ……. and ………… existed .
6. The teeth number in adult are ……………., each Jaw has …………..
7. The teeth are divided into (4) ……………. and (2) ………….. and (10) ………
8. ………..
9. Stomach is a ……………..sac.
10. Stomach …………… food by the digestive Juices .
11. In the stomach ………………..digestion of protein takes place by gastric juice.
12. The length of the small intestine is ……….. & starts with apart known as ……….
13. Duodenum is followed by ………………
14. Intestinal Juice is poured in the ………………….
15. In the small intestine digestion is ………………….
16. Large intestine starts from the end of the ………………. & ends with…………………..
17. The human respiratory system consists of ……………. , ………… , ………. ,…………………… and …………..
18. Respiration process is …………………..
19. Nose is lined with ………… layer & hair to ……………..dust and …………..

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20. Trachea is a tube supported with …………………rings that make it ……………
21. Nose contains ……………..to warm the air .
22. Trachea is lined with …………….. to prevent the strange objects .
23. ………….. , ………… are at the top of trachea .
24. ……………. closes off the opening of trachea during swallowing .
25. The trachea branches into two narrow tube called …………….
26. Bronchus is ended by ……………… which surrounded by a network of blood capillaries in where………………….. occurs .
27. The two lungs occupy the …………………… cavity .
28. …………….. separates the thoracic cavity from abdominal

29. The human living body consists of group of …………………
30. The system consists of a group …………….
31. The organ consists of a group of …………….
32. The tissue consists of similar ……………
33. All cells contain …………….. , ……… and ……………
34. The function of the nucleus is the……………….. operations inside the cell and it is in charge of cell division .
35. Sunlight is necessary for plants to make ………………..
36. Plants make their food through the process of ………. in the presence of …………… , …………… and ………..
37. Oxygen is released during the process of …………….
38. Producers are the living thing that make their food by themselves through the process of ……………….
39. ……………… , ………… and ………… are examples of producers

11\. …………….. is the main source of energy on earth's surface.

40\. ……………. cell changes light energy into electric energy directly.

41\. Solar cell changes light energy into ……… energy directly.

42\. The sun generates …….. that rotates turbines for generating electricity .

43. The sun causes wind that rotates .... for generating electricity .
44. .... heaters change solar energy into heat energy .
45. Solar heaters are used for warming and .... of water .
46. Solar heaters change .... energy into .... energy .

47. Rubbing of objects generates .... electricity.
48. .... of objects generates static electricity .
49. Before rubbing the ruler , there is no .... changes on the ruler , while after
50. .... electricity are electric changes flow through connecting wires for long-distance .
51. Current electricity are electric charges flow through connecting .... for long distances .
52. The battery pushes electric charges in .... that reaches to the lamp causing its ....
53. .... is the source of electric current.

<u>What is the function of :</u>

1. Bile Juice ....
2. Stomach...
3. Salivary glands...
4. Canines...
5. Molars...
6. Liver...
7. Pancreas...
8. Nucleus: ....

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9. Plasma membrane: ……………………………………………………………………

10. Sun: ……………………………………………………………………

11. Producers: ……………………………………………………………………

Put (√) or (×) and correct the wrong :

1. A living organism body consists of a set of systems . [ ]
2. The function of the digestive system is the digestion of food . [ ]
3. Digestion of food is changing food to complex substances . [ ]
4. The digestive system of the human body is divided into stomach and mouth. [ ]
5. The digestive canal consists of mouth, pharynx, esophagus, stomach, small intestine and large intestine. [ ]
6. Plant cells contain chloroplasts. [ ]
7. Plants absorb light energy of the sun. [ ]
8. Photosynthesis process is not important for plants. [ ]
9. Plants can't make their own food. [ ]
10. Oxygen is released during photosynthesis process. [ ]
11. Starch is formed by plants. [ ]
12. Producers are living things that can make their own food. [ ]
13. Algae and green plants are producers. [ ]
14. Sun is the main source of energy on the surface of earth. [ ]
15. Plant grows in the presence of sunlight. [ ]
16. Wind is one of non- renewable resources of energy. [ ]
17. Sun and petroleum are from renewable resources of energy. [ ]
18. Car motor works by natural gas or benzene. [ ]
19. The human living body consists of group of systems. [ ]
20. The system consists of a group of organs. [ ]
21. The organ is a group of cell. [ ]
22. The organ is a group of tissues. [ ]

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23. The tissue is a group of similar cells. [ ]

Explain the following:

1. Breathing through the nose is preferable than breathing through the mouth.

……………………………………………………………………………………………………

……………………………………………………………………………………………………

……………………………………………………………………………………………………

2. Exhaled air is different from inhaled air.

……………………………………………………………………………………………………

……………………………………………………………………………………………………

Give reasons for :

Decomposers have a great economical and environmental importance.

……………………………………………………………………………………………………

……………………………………………………………………………………………………

There are chloroplasts in the cells of producers

……………………………………………………………………………………………………

……………………………………………………………………………………………………

Green algae are producers.

……………………………………………………………………………………………………

……………………………………………………………………………………………………

Plant cell has a definite shape.

……………………………………………………………………………………………………

……………………………………………………………………………………………………

The sun is very important to us.

……………………………………………………………………………………………………

……………………………………………………………………………………………………

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Bile juice is very important.

……

……

We must chew food well.

……

……

You feel hot when you rub your hands.

……

……

Molars make the swallowing of food easy.

……

……

Nose is lined with hair and mucus.

……

……

Stomach secretes gastric juice.

……

……

Salivary glands secrete saliva in mouth cavity.

……

……

You hear sound when you tap a tunning fork.

……

……

Small intestines are important.

……

……

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Force is an effect that changes the state of an object.

……………………………………………………………………………………………………

……………………………………………………………………………………………………

We should breathe through the nose.

……………………………………………………………………………………………………

……………………………………………………………………………………………………

The exhalation air is different from inhalation air.

……………………………………………………………………………………………………

……………………………………………………………………………………………………

Eating fruits rich in vitamin C.

……………………………………………………………………………………………………

……………………………………………………………………………………………………

Trachea is lined with cilia.

……………………………………………………………………………………………………

……………………………………………………………………………………………………

The animal cell has no fixed shape.

……………………………………………………………………………………………………

……………………………………………………………………………………………………

Lungs have alveoli.

……………………………………………………………………………………………………

……………………………………………………………………………………………………

The kite flies in the sky.

……………………………………………………………………………………………………

……………………………………………………………………………………………………

Pulleys is very important in machines.

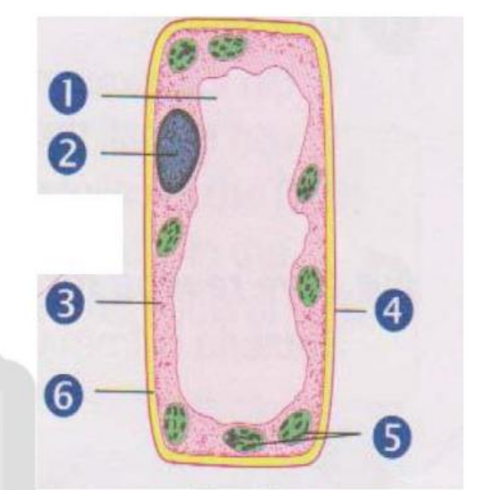
……………………………………………………………………………………………………

……………………………………………………………………………………………………

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The following figure represents……………………cell.

Label the figure:



1]……………………………..

2]……………………………..

3]……………………………

4]……………………………

5]……………………………

The following figure represents……………………system.

Label the figure:

1]……………………………..

2]……………………………

3]……………………………

4]……………………………

5]……………………………

6]……………………………

7]……………………………..

8]……………………………..

9]……………………………..

10]……………………………..

11]……………………………..